

CL 1-31  
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

1. A method for reducing corrosion of a head element during rework operations, said head element being initially contained within the housing of an assembled disk drive, said method comprising the steps of:  
opening said housing of said disk drive;  
removing said head element from said housing of said disk drive; and  
applying a protective coating to said head element.
2. The method, as claimed in Claim 1, further comprising the step of cleaning said head element prior to said step of applying a protective coating.
3. The method, as claimed in Claim 1, wherein said protective coating is applied in a vacuum chamber.
4. The method, as claimed in Claim 1, wherein said protective coating is applied utilizing solvent-mediated deposition.
5. The method, as claimed in Claim 1, wherein said protective coating is applied utilizing vapor-mediated deposition.
6. The method, as claimed in Claim 1, wherein said step of applying a protective coating is performed by depositing precursor molecules in the vapor phase.

7. The method, as claimed in Claim 1, wherein said protective coating comprises a fluorocarbon polymer.

8. The method, as claimed in Claim 1, wherein said protective coating is a thickness of greater than 50.

9. The method, as claimed in Claim 1, further comprising the step of storing said head element following said step of applying said protective coating.

10. The method, as claimed in Claim 1, further comprising the step of post-processing said protective coating to enhance its corrosion protection.

11. The method, as claimed in Claim 1, further comprising the step of reworking at least one component of said disk drive.

12. The method, as claimed in Claim 10, further comprising the step of removing at least a portion of said protective coating after said step of reworking said disk drive.

13. The method, as claimed in Claim 12, further comprising the step of reassembling said disk drive after said step of removing at least a portion of said protective coating.

14. The method, as claimed in Claim 11, further comprising the step of removing at least a portion of said protective coating from said head element after said step of reworking said disk drive.

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	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2
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23. The method, as claimed in Claim 11, further comprising the step of reassembling the disk drive followed by the step of removing at least a portion of said protective coating.

24. The method, as claimed in Claim 23, further comprising the step of testing said disk drive.

25. The method, as claimed in Claim 13, further comprising the step of removing at least an additional portion of said protective coating after said step of reassembling the disk drive.

26. The method, as claimed in Claim 25, further comprising the step of testing said disk drive.

27. The method, as claimed in Claim 15, further comprising the step of removing at least an additional portion of said protective coating from said head element after said step of reassembling said disk drive.

28. The method, as claimed in Claim 27, further comprising the step of testing said disk drive.

29. The method, as claimed in Claim 1, wherein said protective coating thickness comprises at least one monolayer.

30. The method, as claimed in Claim 1, wherein said protective coating thickness comprises at least 50 angstroms.

31. The method, as claimed in Claim 1, wherein said protective coating is applied having a thickness up to approximately 250 angstroms.

32. In a disk drive having at least one head element, said disk drive having been opened after initial assembly for purposes of reworking, and the head element having been removed, the improvement comprising:

a protective coating applied to said head element to reduce corrosive effects from the surrounding atmosphere.

33. The improvement, as claimed in Claim 32, wherein said protective coating is applied in a vacuum chamber.

34. The improvement, as claimed in Claim 32, wherein said protective coating is applied utilizing a solvent-mediated deposition process.

35. The improvement, as claimed in Claim 32, wherein said protective coating is applied utilizing a vapor-mediated deposition process.

36. The improvement, as claimed in Claim 32, wherein said protective coating comprises a fluorocarbon polymer.

37. The improvement, as claimed in Claim 32, wherein said protective coating is a thickness of greater than 50.

38. The improvement, as claimed in Claim 32, wherein said protective coating is applied by depositing precursor molecules in the vapor phase.

39. The improvement, as claimed in Claim 32, wherein said protective coating is exposed to an energy source selected from the group consisting of infrared, ultraviolet, plasma, or radiant heat.

40. The method, as claimed in Claim 32, wherein said protective coating thickness comprises at least one monolayer.

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42. The method, as claimed in Claim 32, wherein said protective coating is applied having a thickness up to approximately 250 angstroms.

Station	Time	Lat.	Long.	Depth	Wind	Temp.	Pressure	Humidity	Clouds	Visibility	State	Remarks
1	0000	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
2	0100	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
3	0200	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
4	0300	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
5	0400	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
6	0500	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
7	0600	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
8	0700	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
9	0800	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
10	0900	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
11	1000	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
12	1100	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
13	1200	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
14	1300	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
15	1400	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
16	1500	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
17	1600	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
18	1700	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
19	1800	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
20	1900	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
21	2000	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
22	2100	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
23	2200	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear
24	2300	34° 15' N	121° 05' E	10	0.0	10.0	1013.0	95	0-1	10	0	Clear

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transporting said container.

47. A method for storing a head element removed from a disk drive, said method comprising the steps of:

removing said head element from said disk drive;  
applying a protective coating to said head element; and,  
placing said head element in a storage container.

48. The method, as claimed in Claim 47, further comprising the step of cleaning said head element prior to said step of applying a protective coating.

49. The method, as claimed in Claim 47, further comprising the step of mounting said head element to a shipping comb.

50. The method, as claimed in Claim 49, wherein said step of applying a protective coating to said head element occurs following mounting said head element to said shipping comb.

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FOOTNOTES

51. In subcombination, from a disk drive that is disassembled and at least partially reworked, the subcombination comprising:
- a head element for transferring data to and from said disk;
  - a protective coating on said head element applied after disassembly.
52. The subcombination, as claimed in Claim 51, further comprising a shipping comb, wherein said head element is mounted on said shipping comb.
53. The subcombination, as claimed in Claim 51, wherein said protective coating comprises polymeric fluorocarbon.
54. The subcombination, as claimed in Claim 51, wherein said protective coating is applied utilizing a solvent-mediated deposition process.
55. The subcombination, as claimed in Claim 51, wherein said protective coating is applied utilizing a vapor-mediated deposition process.
56. The subcombination, as claimed in Claim 51, wherein said protective coating is applied by depositing precursor molecules in the vapor phase.
57. The subcombination, as claimed in Claim 51, wherein said protective coating is a thickness of greater than 50 angstroms.
58. The subcombination, as claimed in Claim 57, wherein said protective coating is exposed to a solvent.
59. The subcombination, as claimed in Claim 54, wherein said protective coating is post-processed to enhance its corrosion protection.
60. The subcombination, as claimed in Claim 59, wherein said protective coating is exposed to an energy source selected from the group consisting of infrared, ultraviolet, plasma, or radiant heat.

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63. The method, as claimed in Claim 51, wherein said protective coating is applied having a thickness up to approximately 250 angstroms.

Station	Time	Lat	Long	Alt	Temp	Humid	Wind	Dir	Speed	Cloud	Vis	Pressure	Remarks
100000	0000	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	0100	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	0200	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	0300	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	0400	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	0500	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	0600	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	0700	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	0800	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	0900	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	1000	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	1100	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	1200	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	1300	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	1400	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	1500	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	1600	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	1700	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	1800	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	1900	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	2000	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	2100	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	2200	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	2300	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear
100000	2400	33° 00' N	122° 00' W	1000	55.0	85	10	000	000	000	10	1010.0	Clear